



Forest Insect & Disease Management

Report No. 80-1-12
May 1980

BIOLOGICAL EVALUATION OF SOUTHERN PINE BEETLE INFESTATIONS ON THE UWHARRIE NATIONAL FOREST, NORTH CAROLINA

William H. Hoffard and Kristine D. Johnson

ABSTRACT

Southern pine beetle (Dendroctonus frontalis) infestations were detected on the Uwharrie National Forest. An aerial survey of 220,000 acres combined with ground checks showed five infestations in the northern wilderness areas of the Forest. No control is recommended, but Forest personnel should be aware of future possible infestations.

INTRODUCTION

A biological evaluation was made on the Uwharrie National Forest to determine the status of southern pine beetle infestations and possible need for suppression measures.

A review of Forest Insect and Disease Management records from August 1966, to present shows that except for pine engraver beetles and black turpentine beetles, the Uwharrie National Forest showed very little bark beetle activity until 1972. However, from October 1972 through October of 1976, southern pine beetle populations were epidemic, ranging from 1.3 to 4.2 infestations per 1,000 acres of host type. The last evaluation in 1977 showed no detectable southern pine beetle activity (Table 1). Typically, southern pine beetle spots have been concentrated in the northern and north-central areas of the forest.

Table 1.--Southern pine beetle population trends from February 1972 to present, Uwharrie National Forest.

	----- Month and Year of Evaluation -----								
	2/72	10/72	8/73	10/73	11/74	10/75	10/76	11/77	2/80
Spots/1000 acres of host type	0.7	1.6	1.4	4.2	4.0	1.3	2.0	0	0.1
Infested trees/ 1000 acres of host type	26.2	57.4	5.3	48.0	353.5	20.2	124.3	0	3.2

METHODS

A standard aerial sketch map survey (100%) was made by personnel of the Aerial Survey Team, Forest Insect and Disease Management, Doraville, Georgia, on January 16, 1980. Locations of dead and dying trees were marked on a Class A Forest Service map which was forwarded to the Asheville Field Office.

On February 5 and 6, 1980, Asheville Field Office and Uwharrie National Forest personnel ground checked each potential infestation. Data collected at each spot included the number and cause of killed trees, number currently infested, age, size, and stocking levels.

RESULTS

Table 2 shows results of the aerial survey. Table 3 shows data gathered during the ground phase of the survey. Figure 1 shows areas where southern pine beetle activity is concentrated.

DISCUSSION AND RECOMMENDATIONS

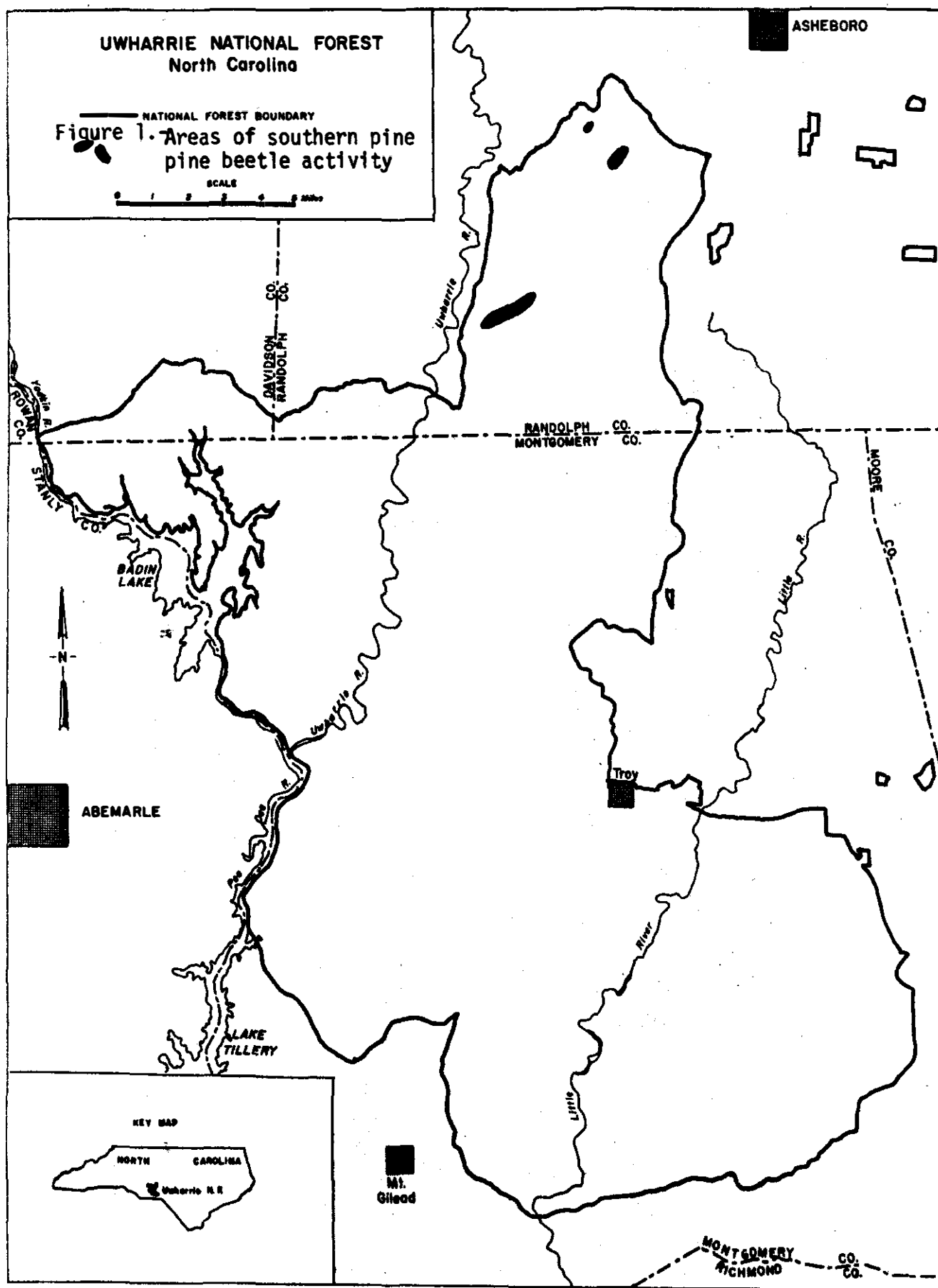
With only five infestations, the data indicates that southern pine beetle populations are low. All spots are located in designated wilderness areas and no control is planned. Nevertheless, heavy activity to the south and east of the Uwharrie National Forest requires that personnel be conscious of possible increased activity in the spring and summer of 1980. If infestations are detected in nonwilderness areas, they should contact FIDM in Asheville for advice on the latest recommended controls.

**Table 2.--Spot size distribution on Uwharrie National Forest--
Complete Aerial Survey Data (Bassett, 1980)**

<u>2-5</u>	<u>6-20</u>	<u>21-50</u>	<u>50-100</u>	<u>100+</u>	<u>Total</u>
0	2	1	2	0	5

Table 3.--Southern pine beetle spot infestation data, Uwharrie National Forest.

Spot No.	No. of Killed Trees	No. of Infested Trees	\bar{x} Age	\bar{x} Diameter	Pine Basal Area	Total Basal Area
1	43	2	78	12.7	100	150
2	25	8	52	11.4	90	100
3	61	40	55	10.0	130	120
4	11	1	37	9.8	120	120
<u>5</u>	<u>6</u>	<u>1</u>	<u>47</u>	<u>10.0</u>	<u>140</u>	<u>140</u>
Totals (or \bar{x})	146	52	(54)	(10.8)	(100)	(130)



LITERATURE CITED

Bassett, Robert. 1980. Aerial Detection Survey of Forest Insect and Disease Activity, Uwharrie National Forest. Report No. 80-3-7.